

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference WP 10302	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/EP2004/002534	International filing date (day/month/year) 11.03.2004	Priority date (day/month/year) 27.03.2003
International Patent Classification (IPC) or national classification and IPC		
Applicant WACKER POLYMER SYSTEMS GMBH & CO. KG		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of _____ sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>3</u> sheets, as follows: <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/002534

Box No. I

Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-15 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 1-17 _____ received by this Authority on 31.03.2005 with letter
- nos.* _____ received by this Authority on of 29.03.2005
- ☐ the drawings:
- sheets _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-17	YES
	Claims		NO
Inventive step (IS)	Claims	1-17	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-17	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
1. Reference is made to the following documents:			
D1: WO 92/10539 A (HENKEL KGAA)			
25 June 1992 (1992-06-25)			
D2: DE 197 11 712 A (WACKER CHEMIE GMBH)			
24 September 1998 (1998-09-24)			
D3: EP-A-O 611 804 (AIR PROD & CHEM)			
24 August 1994 (1994-08-24)			
D4: DE 196 11 671 A (LAY GUSTAV)			
9 January 1997 (1997-01-09)			
D5: DE 199 38 672 A (BIOP BIOPOLYMER GMBH)			
15 February 2001 (2001-02-15).			
2. Novelty			
<p>The present application relates to the use of polymers, in the form of the polymer powder thereof or as an aqueous polymer dispersion, for modifying starch (between 5 and 60 wt.% of polymer relative to the amount of starch), being characterised in that the polymers used, which polymers are stabilised with protective colloid and/or emulsifier, are from the group comprising</p> <p style="text-align: right;">/...</p>			

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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vinyl esters, acrylic acid esters/methacrylic acid esters, dienes, vinyl aromatics and vinyl halogenides, containing between 0.1 and 20 wt.% of ethylenic unsaturated comonomers with carboxyl groups, epoxy groups, NH groups or hydroxyalkyl(meth)acrylate (claim 1).

Documents D1, D3 and D5 disclose non-functionalised polymers. Document D2 discloses the use of between 5 and 10 wt.% starch, and document D4 does not disclose a polymer as per the invention.

In consequence, the subject matter of claims 1-17 of the present application is novel over documents D1 to D5.

3. Inventive step

Document D1 is regarded as the closest prior art.

Document D1 discloses the use of non-functionalised polymers for modifying starch.

The problem addressed by the present application was that of developing thermoplastically modified starch compositions which can be used to provide moulded bodies that are characterised by increased rigidity, in particular when wet, (see page 2, lines 10-14).

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

The above problem was solved by the use of functionalised polymers (see the examples).

This solution is not suggested in document D1, nor is it obvious from document D1 in combination with documents D2 to D5.

Thus, the subject matter of claims 1-17 of the present application involves an inventive step relative to documents D1 to D5.